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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Fernando Oliveira

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EXAMINER

PANNALA, SATHYANARAYA R

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/808,781	Applicant(s) OLIVEIRA ET AL.	
	Examiner Sathyanarayan Pannala	Art Unit 2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's Amendment filed on 12/26/2007 has been entered with In this Office Action, claims 1-27 and 32-34 are pending.

Specification

2. The **summary of the invention** is objected because it is a copy of claims. A revised summary is required without adding new matter and that is clearly indicative of the invention to which the claims are directed. See MPEP §§ 608.01(d).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 15-20 are rejected under 35 U.S.C. 101 the claimed invention is directed to non-statutory subject matter. Claim 15 as a whole constitutes merely a software program that is not recited as being embodied on a medium that a computer may access to realize the functionality of a program. Therefore the claims 15-20 are non-statutory and ineligible for a patent.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2, 9-11, 14-17, 20-21, 26, 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatani (US Patent 7,047,355) hereinafter Nakatani, and in view of Akutsu et al. (US Patent 6,510,986) hereinafter Akutsu.

As per independent claims 1, 15, 21 and 32, Nakatani teaches a storage system and to write efficiently write journal logs and execute flush processing (col. 1, lines 62-64).

Nakatani teaches the claimed, creating a journal entry that points to a first storage location containing old data to be replaced by the new data (Fig. 2, 8, col. 6, lines 4-27 and col. 12, lines 14-17). Nakatani teaches the claimed, allocating new storage space having a second storage location (Fig. 4, col. 8, lines 24-28). Nakatani teaches the

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claimed, writing the new data to the new storage space at the second storage location, wherein the old data is maintained in the first storage location after writing the new data to the new storage space at the second storage location (Fig. 4, 6, col. 8, lines 30-34 and col. 9, lines 61-65). Nakatani explicitly does not teach maintaining journal entries. However, Akutsu teaches the claimed, the journal entry is maintained after writing the new data (Fig. 7, col. 4, lines 54-59 and col. 14, lines 56-65). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Akutsu's teachings would have allowed Nakatani's method to provide journal data to be preserved as electronic data (col. 2, lines 24-25).

7. As per dependent claims 2, 16, Nakatani teaches the claimed, the storage space is provided by at least one storage device (Fig. 1, col. 2, lines 40-43).

8. As per dependent claims 9, 26, Nakatani teaches the claimed, the storage space corresponds to a disk array storage device (Fig. 1, col. 3, lines 52-55).

9. As per dependent claim 10, Nakatani teaches the claimed, the journal entry is stored in the disk array storage device (Fig. 1, col. 11, lines 59-60).

10. As per dependent claim 11, 17, Nakatani teaches the claimed, the journal entry is stored outside the disk array storage device (Fig. 1, col. 11, lines 59-60).

11. As per dependent claims 14, 20, 34, Nakatani teaches the claimed, each of the journal entries also includes a result of writing the data (Fig. 1 col. 12, lines 23-26).

12. Claims 3-8, 12-13, 18-19, 22-25, 27 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatani (US Patent 7,047,355) hereinafter Nakatani, in view of Akutsu et al. (US Patent 6,510,986) hereinafter Akutsu, and further in view of Testardi (US Patent 7,013,379) hereinafter Testardi.

13. As per dependent claims 3, Nakatani and Akutsu do not explicitly teach using a switch. However, Testardi teaches the claimed, allocating new storage space includes remapping a switch coupled to the at least one storage device (Fig.3, col. 7, lines 14-16). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

14. As per dependent claim 4, Nakatani and Akutsu do not explicitly teach using a switch. However, Testardi teaches the claimed, the new data is written by a host coupled to the switch (Fig. 3, col. 7, lines 12-14). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

15. As per dependent claim 5, Nakatani and Akutsu do not explicitly teach using a switch. However, Testardi teaches the claimed, the switch presents the host with a logical storage area that is created by the switch mapping to different locations of the at least one storage device (Fig. 3, col. 7, lines 8-16). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

16. As per dependent claim 6, Nakatani and Akutsu do not explicitly teach using a switch. However, Testardi teaches the claimed, the mapping is transparent to the host (Fig. 7, col. 10, lines 62-64). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55,).

17. As per dependent claims 7, 27, Nakatani and Akutsu do not explicitly teach using a switch. However, Testardi teaches the claimed, the switch includes at least one processor and a corresponding memory (components in the switch varies) (Fig. 2, col. 6, lines 44-47). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would

have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

18. As per dependent claims 8, 18, Nakatani and Akutsu do not explicitly teach using a switch. However, Testardi teaches the claimed, the journal entry is part of a journal that is stored in the memory (col. 27, lines 23-25). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

19. As per dependent claims 12, 24-25, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, allocating new storage space includes remapping a switch coupled to the disk array storage device and wherein the journal entry is stored on the switch (Fig. 7, col. 11, lines 12-21). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

20. As per dependent claims 13, 19, 22-23, 33, Nakatani and Akutsu do not explicitly teach using a switch. However, Testardi teaches the claimed, each of the journal entries also includes a

time stamp (col. 22, lines 7-10). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Nakatani's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

Response to Arguments

21. Applicant's arguments filed on 12/26/2007 have been fully considered but they are moot in view of the new ground(s) of rejection and details as follows:

- a) Applicant's argument stated as "Nakatani does not disclose a system, that allows for restoring..." (see page 14, paragraph last).

In response to Applicant continuous argument, Examiner Added a new reference by Akutsu and teaches as claimed maintaining the journals after writing the new data (see Akutsu (Fig. 7, col. 4, lines 54-59 and col. 14, lines 56-65).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sathyanarayan Pannala whose telephone number is (571) 272-4115. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sathyanarayan Pannala/
Primary Examiner

srp
March 27, 2008